

## AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0004] with the following amended paragraph:

[0004] Figure 1 illustrates a prior art system for generating a light in a laser system. The light is generated and amplified by a semiconductor optical amplifier (SOA) chip [[101]]. The light generated by the SOA enters a wave guide [[105]] consisting of a clad material [[110]], such as silicon dioxide or other material with a lower refractive index than the core, a wave guide core [[115]], and series of grating elements [[120]] (grating) that help to direct and refine the light toward a desired wavelength and phase. After light enters the wave guide, it is passed through the grating, which can refine the character of the light, including the light's wavelength.

Please replace paragraph [0030] with the following amended paragraph:

[0030] In the above equation, the summation of the multiplicative products of the refraction indices of the various segments between the SOA chip and the grating ( $n_{\text{eff, SOA}}$ ,  $n_{\text{eff,L1}}$ ,  $n_{\text{eff, phase}}$ ,  $n_{\text{eff, L2}}$ , and  $n_{\text{eff, grating}}$ ) and the lengths of the respective segments ( $L_{\text{SOA}}$ ,  $L_{\text{L1}}$ ,  $L_{\text{phase}}$ ,  $L_{\text{L2}}$ , and  $L_{\text{grating}}$ ) 602, 603, 604, 605, 606 are a constant integer multiple (m) of the desired light wavelength 607. The entire sum is multiplied by two to account for the round trip of the light photon. In other embodiments, other methods of determining the length of clad, core, and polymer segments in order to stabilize the effective phase of the laser generating device may be used. For example, in at least one embodiment of the invention,  $L_{\text{L1}}$ ,  $L_{\text{phase}}$ , and  $L_{\text{L2}}$ , may be represented by one or two lengths encompassing the the sum of  $L_{\text{L1}}$ ,  $L_{\text{phase}}$ , and  $L_{\text{L2}}$ . Furthermore, one or more of the [[these]] segment lengths may be represented by multiple segment lengths in other embodiments of the invention.